

Applicant : Jian Bai, Steven M. Fischer and J. Michael Flanagan
Appl. No. : Unknown
Examiner : Nguyen, Kiet T.
Docket No. : 10980322-6

Amendments to the Claims

Please cancel claims 1-33 and insert the following new claims 34-50.

1-33. (Cancelled)

34. (New) A method for preparing a sample containing at least one analyte for mass analysis comprising:

- (a) providing a matrix containing said sample to create a matrix/sample mixture;
- (b) maintaining the matrix containing said sample in a condition of ambient pressure greater than 100 mTorr while directing laser energy onto the matrix to desorb and ionize the at least one analyte, and
- (c) directing the ionized analyte from the ambient pressure condition into a mass analysis device.

35. (New) The method of claim 34 wherein the desorption and ionization occurs at a temperature between about -196 to 500°C.

36. (New) The method of claim 34 wherein the analyte is an organic compound selected from small molecules having a molecular weight of less than about 1000 daltons or synthetic organic polymers having a molecular weight of up to 1,000,000 daltons, or fragments thereof.

37. (New) The method of claim 34 wherein the at least one analyte is a biologically related or biologically derived material selected from the group consisting of deoxyribonucleic acid (DNA), ribonucleic acid (RNA), peptide, protein, lipid, carbohydrate, an organism, a plasmid, bacteria, fungi, algae, viral particles, and cells or fragments thereof.

38. (New) The method of claim 34 wherein a wavelength of the laser energy is selected from the group consisting of a laser operated at ultraviolet (UV), visible (VIS) and (IR) infrared wavelengths.

39. (New) The method of claim 34 wherein the ambient pressure is atmospheric pressure.

40. (New) A method for analyzing a sample comprising:

- (a) providing the sample containing an analyte;

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(b) maintaining said sample in a condition of ambient pressure greater than 100 mTorr

(c) directing laser energy onto the sample to desorb and ionize the analyte to create ionized analyte;

(d) directing the ionized analyte into a mass analysis device, and

(e) mass analyzing the ionized analyte received by the mass analysis device.

41. (New) The method of claim 40 wherein the mass analysis device is selected from the group consisting of time-of-flight, ion trap, quadrupole, Fourier transform ion cyclotron resonance, magnetic sector, and electric sector, and combinations thereof.

42. (New) The method of claim 40 further comprising repeating the step of providing to produce multiple samples and positioned for sequential analysis in an organized or random manner.

43. (New) The method of claim 42 wherein the multiple samples are contained in a multiple sample holder which is stationary and the laser is mobile and is positioned to sequentially analyze the stationary multiple samples in an organized or random manner.

44. (New) The method of claim 40 wherein the laser energy is operated at ultraviolet (UV), visible (VIS), or infrared (IR) wavelengths, or combinations thereof.

45. (New) The method of claim 40 wherein the analyte is desorbed and ionized in air, helium, nitrogen, argon, oxygen, or carbon dioxide, or combinations thereof.

46. (New) The method of claim 40 wherein the sample and matrix are in a moving liquid.

47. (New) The method of claim 40 wherein the sample comprises a static liquid.

48. (New) The method of claim 40 wherein the sample is desorbed and ionized at or near ambient pressure and the sam40wherein ionized analyte comprises positive ions.

50. (New) The method of claim 40 wherein the analyte comprises negative ions.

51. (New) A method for the mass spectrometric analysis of ions produced by matrix-assisted laser desorption and ionization of at least one analyte in a sample, wherein the improvement comprises conducting the matrix-assisted desorption and ionization at an ambient pressure greater than 100 mTorr.

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Notes:

Claims 34-51 are pending in this application. Claims 1-33 have been cancelled without prejudice. New claims 34-51 are added in this Amendment.

Conclusion

Should the Examiner have any questions or comments, the undersigned can be reached at (949) 567-6700.


The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 50-1078.

Respectfully submitted,

ORRICK, HERRINGTON & SUTCLIFFE LLP

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By: _____


Kurt T. Melville
Reg. No. 37,194

Orrick, Herrington & Sutcliffe LLP
4 Park Plaza, Suite 1600
Irvine, CA 92614-2558
Tel. 949-567-6700
Fax: 949-567-6710